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Perspective

Aiding or undermining? The military as an emergent actor in global climate governance

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ABSTRACT

The military is emerging as an important actor in climate change mitigation and adaptation, particularly when it comes to responding to climate extremes. While not generally considered a "governance actor" in scholarship on climate governance, militaries increasingly participate in climate-related knowledge production, resource provision, and decision-making. However, the nature and degree of involvement of militaries in these issues vary from context to context, based on political, socio-cultural, institutional, and economic conditions. This Perspective examines this expanding role through the five Earth System Governance research lenses. We argue that it is necessary to more fully account for the emergence of this powerful actor within accepted democratic frameworks of climate governance. Key research questions relate to the implications of military involvement, the appropriateness of military involvement in different contexts, and the consequences of the involvement of an authoritarian actor for climate governance norms.

Introduction

The military is emerging as an important actor in both climate change mitigation and adaptation. Scholarship on climate governance tends to treat the military as an enforcing or peripheral actor, involved in implementing governance decisions. However, armed forces play an increasing role in various aspects of climate governance, including strategic resource planning, disaster response, and decision-making. These changes are gradually reshaping narratives surrounding the military and climate governance. This Perspective reviews the emergence of the military as a key actor in climate governance, highlights areas where military actors play important but understudied roles, and develops recommendations to ensure that climate governance scholarship accounts for the military's unique and powerful role.

The role of military actors in broader environmental governance strengthened during the post-Cold War era as countries and international organisations such as the United Nations (UN) began to acknowledge and encourage the use of military resources to prevent environmental accidents, protect endangered species, monitor pollution, dispose toxic waste, and recycle waste (United Nations Office for Disarmament Affairs, 1993). Increasingly, they have also been participating in climate research, decision-making, and action. In the USA, the Pentagon spends considerable resources assessing the impacts of climate change on the military. This focuses on national security in terms of threats posed by rising sea levels to coastal cities and military assets, climate refugees, disputes over resources, and requirements for Humanitarian Assistance and Disaster Relief (HADR) (CNA Military Advisory Board 2014). In developing economies such as India and Indonesia, the military has long been associated with activities such as HADR and ecological restoration (Jayaram, 2020; Laksmana, 2011). Military actors also participate in policy councils and networks such as the Global Military Advisory Council on Climate Change (GMACCC) and the International Military Council on Climate and Security (IMCCS) (Jayaram, 2020).

As climate responses increasingly implicate militaries, it is necessary to more fully account for their role in climate governance. The military are unique from other climate actors because of their substantial resource base, hierarchical, non-democratic structure, and capacity for the exercise of raw force (Burnell, 2012; Butts, 1999). Climate governance research addressing the military largely focuses on issues of security and securitisation (i.e. recognition of an issue as a threat to survival through a 'speech act', allowing it to be treated by emergency and exceptional measures, primarily by the political elites (Buzan et al., 1998)). It doesn't focus

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on the role of the military as an actor in its own right (e.g. Oels, 2015).

This Perspective assesses the role of the military in climate governance through the five "lenses" developed in the (2018) Earth System Governance Science Plan: architecture and agency, democracy and power, justice and allocation, anticipation and imagination, and adaptiveness and reflexivity. Each lens is described and then applied to the military as an actor using evidence from other research domains (e.g. security studies, international relations), and empirical examples of military engagement in climate governance. This is followed by a summary of key research needed to better understand the implications of the evolving role of the military in climate governance.

Architecture and agency

The architecture and agency lens foregrounds institutional structures and actor interactions. This requires identifying governance actors, examining how they are legitimated and conditioned, and what role they play *vis a vis* institutional structures, and ultimate outcomes. While environmental governance acknowledges that environmental conflict can trigger military intervention (e.g. Dreyer, 2011), the destabilisation caused by rapid climate change means that the military is becoming a regular, rather than intermittent, actor in climate-related environmental governance.

'Securitisation' of climate change redefines the military's role from a general agent of security, to an agent of climate security (McDonald, 2013). This new role is co-dependent on the integration of climate change into the security architecture itself (Oels, 2015). This process expands security agendas; more issues can be accommodated, and a wider range of actors can assume the role of the 'referent object' (the one to be secured from the threat) (Buzan et al., 1998). Importantly, there is debate about the extent to which climate has actually been "securitised". While it has been discursively recognised as an existential threat to peace and security, this is not matched by proportionate restrictions on climate harming activities, or release of funds to address issues (Oels, 2015). Regardless, securitisation helps legitimise the military as a climate governance actor.

In countries where the government has not responded adequately to climate threats through democratic civilian mechanisms, it can fall to the military to take action to protect populations, and provide input into governing decisions. For example, following extreme flood events in the UK, government officials stated that "putting military liaison officers into [high level disaster decision-bodies] so that they're embedded in the system has been a major step forward" (Forces.net, 2020). This dynamic is indicative of the growing legitimacy of militaries as governing actors in climate change-related emergency situations (Scott and Khan, 2016). However, despite – or perhaps because of – legitimising actions taken by some governments, this legitimacy is contested in both public and academic spheres (Fassin, 2010).

In some countries, military involvement in climate change is perceived as indispensable. Sharon Burke, Obama's Assistant Secretary of Defence for Operational Energy, recognizes that despite lacking a formal climate change governance-related role, the Department of Defence and the Pentagon are:

> … overwhelmingly the centre of gravity … They have by far the largest budget and the largest workforce, and they have presence in every state. They also have a great deal of public support … On a practical level, if the Pentagon does not weigh in on [climate change] then our governance capacity is hurt … In this country, we have no choice but to bring in military governance on what is primarily a civilian issue. (Burke, 2019)

Geopolitical conditions can also legitimate military involvement in climate governance. For example, in heavily militarised areas such as India's Ladakh, the military is the sole legitimate actor due to "everyday linkages" that the military has with remote areas, as well as to financial constraints and bureaucratic inertia resulting from weak formal governance structures (Field and Kelman, 2018:654). The military can be best placed to respond to environmental and climate impacts in such areas of border conflict.

Co-evolution of climate governance architecture and military agency is clearly visible. With the adoption of climate discourses by security actors, "existing security practices are applied to the issue of climate change and … new practices from the field of climate policy are introduced into the security field" (Oels, 2012:185). For instance, Maertens (2019:20), referring to UN peacekeeping operations in Haiti, notes that peacekeeping is "slowly framed as part of the environmental realm". This facilitates recognition of environmental issues as threats to international security by agencies such as the United Nations Environment Programme (UNEP). However, it also represents a blurring of boundaries between environmental and security architectures.

Existing security architectures are also restructuring, with implications for climate governance. For example, the United Nations Security Council (UNSC) has recognised climate security. Interdependencies between climate change adaptation, development and security provide "scope for the UNSC to contribute positively to global climate change governance" (Scott 2015:1333). The UNSC's involvement in climate change-related issues also brings to fore the inevitable linkages with (potential) military intervention in contexts where environmental and climate dangers pose significant threat to peace and stability (Gray, 2012).

Democracy and power

The democracy and power lens highlights the role of democracy in earth system governance, and the relationships of power that define both democratic interactions, and governance outcomes. This foregrounds issues of accountability, legitimacy and transparency in governance processes, who can participate in governance activities, and in what ways (Earth System Governance Project, 2018).

Research on climate governance addresses tensions between democratic ideals and the rapid and often disruptive actions required to address climate change. Scholars have contrasted the climate responses of authoritarian and democratic states, unpacking the complicated interrelationships between democracy, democratisation and climate action (e.g. Pickering et al., 2020). Democratisation may complicate mitigation efforts due to existing political incentive structures (e.g. short term electoral cycles) and socio-economic conditions (e.g. demand for fulfilment of basic human needs) (Burnell, 2012). Given the hierarchical, authoritarian character of military organisation, their involvement in climate governance raises important questions about the extent to which democratic ideals are upheld in pursuit of climate action.

Despite democratic concerns, there is debate over concordance between the government, military and society to facilitate effective climate governance. Some believe that militaries are not suited for climate governance as they uphold elite power, take control of resources through violence, and undermine rights of the dispossessed (e.g. construction of dams in the Brazilian Amazon) (Marzec, 2015). Others highlight institutional or legal provisions introduced to facilitate civil-military coordination during crises. For example, 'in aid to civil authorities' is used by the Indian armed forces to engage in HADR domestically and abroad (Jayaram, 2020). These opposing views highlight that the role of the military relative to

democratic practice is perceived differently depending on context according to history, culture, and politics. These factors define civil-military relations and shape what is viewed as an appropriate role for the military in different climate governance contexts.

Transparency and inclusivity are key objectives of climate governance. Militaries are generally not transparent about spending and actions. Military contributions to greenhouse gas (GHG) emissions are rarely counted due to reporting exemptions provided within most climate change agreements (Light, 2014) and domestic legislation. For instance, the Australian Defence Force provides only limited information on its carbon emissions due to "sensitivities" regarding its operations (Branagan, 2013). This is problematic given, for example, that the US military is "the largest single institutional consumer of hydrocarbons in the world" (Belcher et al., 2020). The accepted lack of transparency makes it difficult to reconcile military activities with recognised climate governance norms.

Increasing legitimation of the military as a climate actor also has implications for its already powerful status. Militaries hold power over others as a result of their capacity to use force. Climate change is a "force multiplier" that allows agencies to heighten their "inward power" by expanding their influence in new arenas, and "to operate in 'external fields' more efficiently" (Chaturvedi and Doyle, 2015:134–148). Such appropriation of climate change responsibilities could benefit a 'military-industrial complex' that is primarily interested in building energy autonomy, consolidating power (Burnell, 2012) or engaging in "militant green nationalism" (Gilbert, 2012).

Disempowerment and marginalisation of civilian agencies are a potential pitfall of military involvement in activities such as HADR (Field and Kelman, 2018). Greater involvement of the military in post-disaster relief activities can harm civil-military relations if overlapping mandates result in turf conflicts (Laksmana, 2011). When one party holds democratic legitimacy and accountability, another holds the core capacity for action, and the delineation of roles and responsibilities is not clear, it is highly likely that implementation activities will be problematic.

Justice and allocation

This lens focuses on issues of fair treatment and equity. There is concern for the distribution of costs and benefits across generations, states, and intersectional social conditions. This highlights the distribution of resources and capacities, recognition within social and political structures, and representation in relevant decision-making processes.

Greater military involvement can reduce the scope for intersectional, recognitional and representative justice (Gilbert, 2012). The involvement of the military in disaster management can threaten humanitarian principles of "impartiality, neutrality, and independence" because militaries focus on physical security rather than "acceptance-based security" (Madiwale and Virk, 2011). For example, militaries often frame climate migrants as state "enemies" instead of focusing on individuals and their experiences. This increases migrant vulnerability (Peoples and Vaughan-Williams, 2014).

Non-disaster military activities also have justice implications. In Brazil, the government and military collaborated to use surveillance to implement anti-deforestation and clean energy policies by usurping lands and rights of indigenous peoples (Marzec, 2015). In Indonesia, there is scepticism over the military takeover of the new national agricultural plan, under which huge swathes of land would be converted into "food estates." This has been opposed by indigenous peoples, and women's, farmer's and advocacy groups over the "militarisation" of agriculture, land grabs, repression of farmers' rights, and program feasibility (Jong, 2020).

Despite critiques, the military does make efforts toward representation and recognition by incorporating stakeholder participation into some military operations. For instance, while engaging in risk assessment processes, militaries translate climate science into local knowledge for dissemination because security depends upon local social and cultural factors (Briggs, 2019). In the late 1990s, the Indian military launched "Operation Sadbhavana" (goodwill among people) to run participatory environmental and adaptation strategies in conflict-stricken regions (Chostak, 2016). This also has implications for the legitimacy of the military as a climate actor.

Military involvement in climate governance also impacts issues of international equity. Formal and informal military coordination and oversight bodies tend to reflect global power disparities between countries. The majority of narratives on the climate-military-security nexus are guided by Organisation for Economic Co-operation and Development (OECD) countries. For example, the IMCCS consists mainly of senior military and security experts, and institutions from the Global North. In another case, the Joint Doctrine of the Indian Armed Forces (JDIAF) borrows from Western discourses on climate security (e.g. on migration, civil strife), but overlooks localised effects of climate change (Jayaram, 2020). These discourses tend to revive a "narrow concept of security" that externalises the threat (Gilbert, 2012) and absolves the state, corporate and other actors from accountability for creating destructive policies and institutions.

Military-to-military climate cooperation can affect international sovereignty. This type of cooperation often takes the form of HADR and includes military disaster management exercises, and sharing of knowledge and standard operating procedures (van Schaik et al., 2020). However, states have also seen such interventions as a violation of sovereignty as when the Myanmar military junta refused to accept post-Cyclone Nargis international humanitarian aid in 2008 (Junk, 2016).

Budgetary allocation is another important distributional justice issue. The use of military resources for climate action, and disaster management reflects that the military is often the "best resourced of all federal agencies" (Butts, 1999). Technological advancements such as renewable energy and biofuels, as well as energy efficiency initiatives, help legitimise militaries as responsible climate actors (Hartman et al., 2012). However, as mentioned, diversion of financial and other resources to the military to advance innovation can reduce resources for other sectors, endangering other public priorities (Gilbert, 2012).

Military interventions and conflicts can also increase distrust, and exacerbate climate, political, socio-economic and other vulnerabilities and injustices. For example, the Sahel region of Africa has experienced decades of military rule. The resilience of communities to cope with climate change has been degraded by armed conflicts and military measures (Vivekananda et al., 2019). Therefore, even while accepting a "positive transformative role", it is important to be aware of any detrimental environmental, social and political effects that military engagement may trigger (Ali and Pincus, 2018).

Anticipation and imagination

The lens on anticipation and imagination reflects the growing importance of anticipatory governance as rapid changes of the climate system increase the need for *ex ante* planning. There are important questions about who is involved in anticipatory governance decisions, how open they are to new ways of thinking, and how and why specific visions of the future are adopted.

Military and intelligence communities contribute to climate governance through scenario planning, early warning, training,

futuring, war games, simulations, and the development of military toolkits (e.g. Briggs and Matejova, 2019). The military's proclivity for "contingency planning" can address some of the challenges presented by rapid and complex climate changes. However, while security forces have long histories in scenario and contingency planning, military cultures and norms tend toward strict hierarchies and are backstopped by the use of force. These types of imaginaries conflict with principles of justice, democracy and social sustainability that drive global aims like the SDGs. Briggs (2019) warns that "the strict division between intelligence and politics" needs to be maintained. However, without clear accounting for the complex role of the military in climate governance, it will be difficult to ensure that military input into policies is filtered through legitimate and accountable governance bodies, and not incorporated *ad hoc* because of a lack of capacity or attention by civilian bodies.

Adaptiveness and reflexivity

Adaptiveness is concerned with responding "to, or in anticipation of, challenges created through environmental change" (Biermann et al., 2010:45). Reflexivity highlights the process of reflecting on existing or changed practices to learn and improve understanding and responses. This lens surfaces questions around the contribution of military actors to practices of adaptation and reflection; interactions between polycentric decision centres (of which the military may be one), stability, and change; and the role of militaries *vis a vis* globally networked risk.

Militaries are concerned about the increasing frequency and intensity of disasters, and the additional response burden this poses, despite the fact that their primary mission is to fight wars (Dalby, 2009). While military actors are regularly called upon as implementors in climate adaptation responses, they are institutionally oriented around other goals. This means that they may not be appropriately trained or resourced for large-scale disaster response. At times, militaries themselves may be affected by disasters. This can disrupt their role in facilitating societal adaptive capacity. For example, direct disaster impacts impeded the military's ability to provide HADR in Aceh, Indonesia in the aftermath of the 2004 Indian Ocean Tsunami (Laksmana, 2011).

In geopolitically tense regions, militaries are forced to engage in reflexive climate adaptation activities. Operations and strategies are being restructured based on climate change assessments. On the Siachen glacier, Indian and Pakistani soldiers are affected by climate change-linked avalanches. This has stimulated discussions and measures by the armies to monitor climate change and "rethink deployment procedures" (Jayaram, 2020). This creates knock-on effects for processes of knowledge and legitimation in these countries, where the severity of climate change is contested. There, "a military perspective on climate change could bridge the gap between believers and doubters" (Klare, 2020).

Towards a research agenda

This overview reveals that the military already acts as a significant climate governance actor. Current climate governance scholarship does not generally reflect this. This raises several questions for climate governance research related to military presence in civilian spaces, the importance of considering Western biases in analyses, and potential conflicts between accepted governance norms and military values.

The use of the military's vast capacities and resources to address emergencies, mediate climate-related geopolitical situations, engage in technical innovation, run participatory exercises, and define anticipated futures, legitimises the military as a climate governance actor. Military actors have also claimed space within national and international climate governance architectures. However, this can delegitimise and disempower state and civilian actors, reinforce global power imbalances, and has the potential to impair the ability of communities to adapt to climate and environmental change. There are important questions regarding the implications for climate governance of the military undertaking traditionally civilian roles, and if and how military capacities can be effectively integrated into climate governance. There is also an ongoing need to examine the consequences of increased normalisation of military logics through these dynamics and general 'securitisation' of climate change. This is particularly important when considering anticipatory governance.

Climate change has increased the need for HADR. This has complicated civil-military relations as there is a fundamental mismatch between military hierarchies and liberal democratic values. Military-to-military cooperation in preparation and response to HADR situations may also trigger sovereignty-related and political concerns. There is a need for work proactively defining appropriate roles and responsibilities for the military in these situations. At the same time, it is necessary to acknowledge that the appropriateness of military role is context-specific.

Arguments of 'national security' often excuse militaries from the transparency mechanisms required of other climate actors. This exempts the military from accountability for environmental and climate impacts. It challenges existing notions of climate governance that argue for greater transparency, inclusiveness and stakeholdership. There are moves to incorporate these practices into military operations. However, questions remain regarding how to reconcile this lack of accountability with accepted climate governance norms.

Finally, beyond climate governance, militaries are increasingly engaged in wider environmental governance. This Perspective has built on scholarship addressing this broader governance domain (e.g. on deforestation (Marzec, 2015), disaster management (Field and Kelman, 2018; Laksmana, 2011), and agricultural land conversion (Jong, 2020)). As broader environmental domains are increasingly impacted by climate change, many of the concerns we have highlighted specifically in the context of climate governance will be applicable to wider contexts. Our comments and concerns regarding the suitability, effectiveness and overall societal consequences of military involvement in climate governance are thus largely applicable to wider governance contexts.

Declaration of competing interest

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